

## Claims

1. An electronic circuit (1,3) for controlling a gas discharge lamp (4), comprising generation means for generating a high frequency pulse train that may be applied to the electrodes of the lamp to light the lamp (4), means by which the generation means may be connected to an electrical power source, a choke (L3) to limit the current drawn by the lamp (4), characterised in that the circuit comprises means (3) for producing a first series of pulses (P0) and independent from this a second series of pulses (P1), and means (T0,T1,L3) for combining additively the first and second series of pulses to produce the high frequency pulse train.

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2. An electronic circuit (1,3) as claimed in Claim 1, in which the means (T0,T1,L3) for combining the first and second series of pulses includes the choke (L3) which connects together the first and second series of the pulses (P0,P1).

3. An electronic circuit (1,3) as claimed in claim 1 or claim 2, in which the circuit (1,3) has paired outputs (TP10,TP20;TP11,TP21) each pair of which provides a steady low voltage output which may be applied to heated electrodes of the lamp (4).

4. An electronic circuit (1,3) as claimed in any preceding claim, in which the means for combining the first and second series of pulses (P0,P1) includes an isolating transformer means (T0,T1) to electrically isolate the lamp (4) from the power source.

5. An electronic circuit (1,3) as claimed in any preceding claim, in which the means (T0,T1,L3) for combining the first and second series of pulses (P0,P1)

comprises a first / transformer (T0) and a second transformer (T1), the primaries of each transformer receiving respectively the first and second series of pulses (P0,P1), each of the secondaries having a tap (TP30,TP31) which may be electrically connected to the contacts of the lamp (4) and each having another tap (TP40,TP41) electrically connected to the choke (L3) so that the choke combines the secondaries and the choke (L3) in series between the contacts.

10 6. An electronic circuit (1,3) as claimed in claim 5, in which at least one of the transformers (T0,T1) has a secondary with a pair of taps (TP10,TP20;TP11,TP21) that may be electrically connected to heater elements of the lamp (4).

15 7. An electronic circuit (1,3) as claimed in claim 6, in which one of the secondary taps (TP20,TP21) for the heater element is electrically connected to one of the 20 secondary taps (TP30,TP31) for the lamp contacts.

25 8. An electronic circuit (1,3) for controlling a gas discharge lamp (4) as claimed in any preceding claim, comprising means (1) for shifting the phase of the first series of pulses relative to the second series of pulses, the means (T0,T1,L3) for combining the first and second series of pulses (P0,P1) thereby varying the width of pulses in the pulse train.

30 9. An electronic circuit (1,3) as claimed in claim 8, comprising means to detect a variation in a supply voltage from the power source, the means for shifting the phase of the first series of pulses relative to the second series of pulses responding to a variation in the supply voltage so that the lamp (4) output may be held steady as the supply voltage varies.

10. An electronic circuit (1,3) for controlling a gas discharge lamp (4) as claimed claim 8 or claim 9, comprising light level control means for setting a desired intensity of light output from the lamp (4), the means (1) for shifting the phase of the first series of pulses (P0) relative to the second series of pulses (P1) responding to the light level control means so that the lamp (4) output may be set at a desired level as the width of the pulses is varied.

11. An electronic circuit (1,3) as claimed in claim 10, comprising motion detection means to detect motion of an object in the vicinity of the circuit, the light level control means responding to the motion detection means so that the lamp (4) output may be set at a desired level according to the detected motion as the width of the pulses is varied.

12. An electronic circuit (1,3) as claimed in any preceding claim, in which the pulse train comprises pulses of both positive and negative polarity.

13. A light fitting having contacts for a gas discharge lamp (4) and an electronic circuit (1,3) as claimed in any preceding claim.